Shining a spotlight on the role STEM plays in the arts and empowering young people to design and build a world of endless possibilities.
The future is a place you will create.

Game Overview

Rick Drummer

Mentor / Adambots FRC 245

Agenda

1:00 PM – Game Overview Presentation

2:15 PM – Scoring Options and Strategy Discussion
- Strategy Helps Inform Design – Form Follows Function

2:45 PM – Preliminary Design Discussions for Those Who Want to Participate

4:00 PM – Finished

2024 Game Overview – Created by the Adambots FRC245

- Game Overview
- The Arena
- Match Play
- Game Play Scoring
- Rule Violations
- Game Play
- Human Actions
- Tournaments
- Considerations
- Key Dates
- Discussion

You may ask questions at any time; but try not to ask before the subject is reviewed!

Game Overview

Two competing alliances score notes, amplify their speaker, harmonize onstage, and take the spotlight before time runs out.

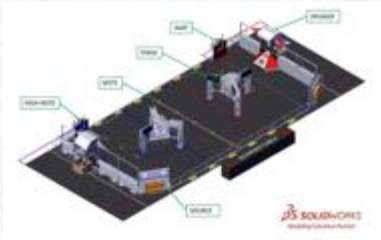
First 15 seconds, robots are autonomous. Robots leave their starting zone, score notes in their speaker or amp, and collect and score additional notes.

The remaining 2 minutes and 15 seconds, drivers control their robots. Robots collect notes and score them in their amp and speaker. Each time an alliance gets 2 notes in their amp, the human player can amplify their speaker for 10 seconds.

A human player may choose to repurpose a note scored in their amp in cooperation with their opponent. If each alliance repurposes a note by hitting their *Coopertition* button in the first 45 seconds of teleop, all teams in the match receive a *Coopertition* point, and the number of notes needed for the melody bonus is reduced.

As time runs out, robots race to get onstage and deliver notes to their traps. Harmonizing robots, i.e. robots sharing a chain, earn an added bonus. Robots earn even more points if a human player spotlights robots on a chain by scoring a note on the chain's microphone.

The alliance that earns the most points wins the match!



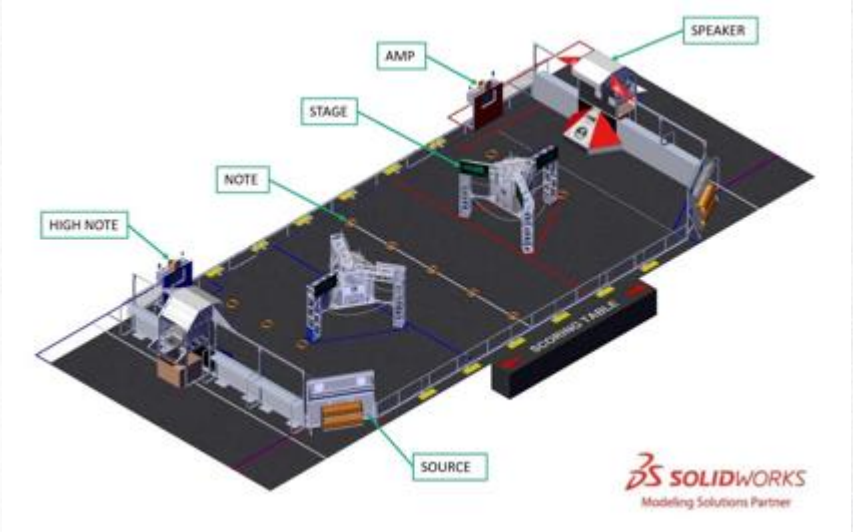
Game Overview - Arena

Field, Queue Area, Team Media Area, Technician Area

Game Pieces

Field Management Equipment

Robot Management Equipment

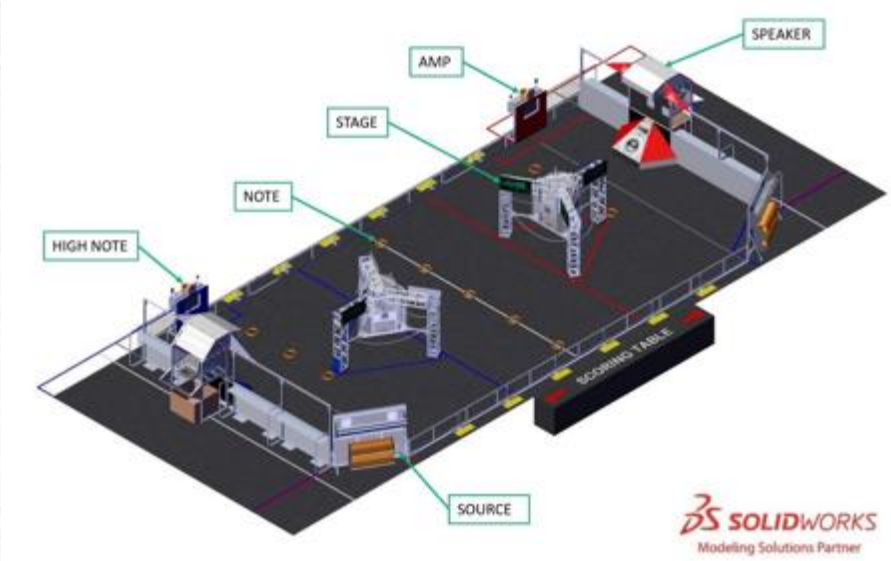


Field

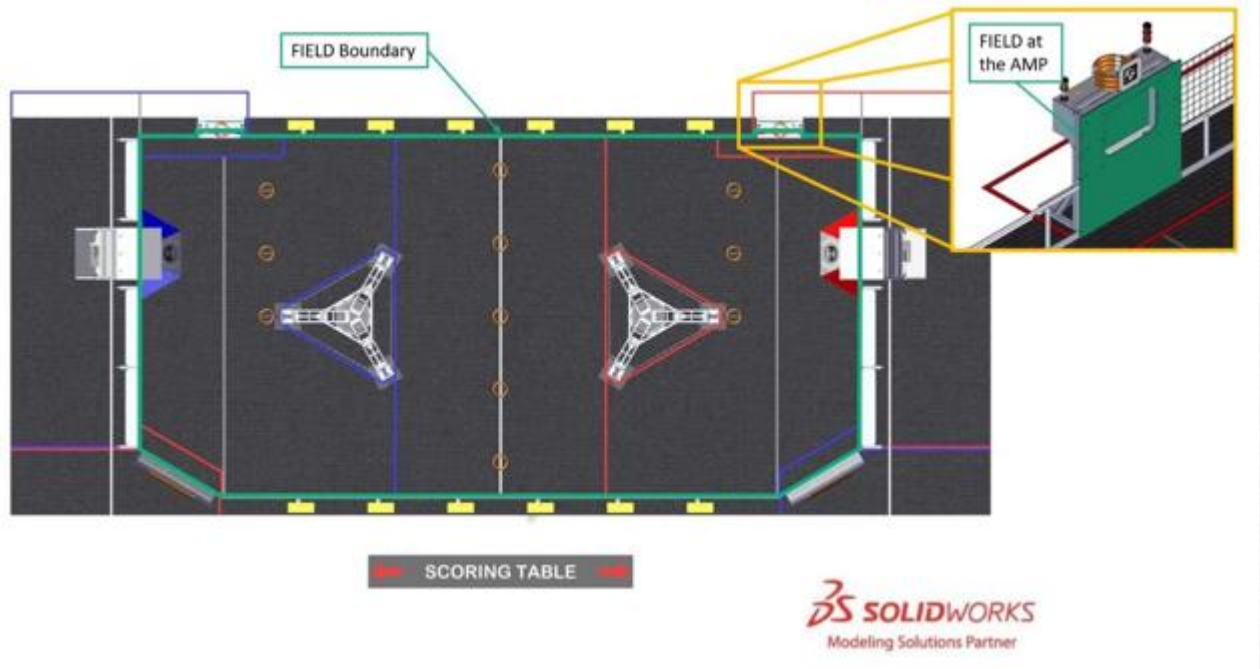
Each FIELD for CRESCENDO is a 26 ft. 11 4 in by 54 ft. 3 ¼ in carpeted area

The FIELD is populated with the following elements:

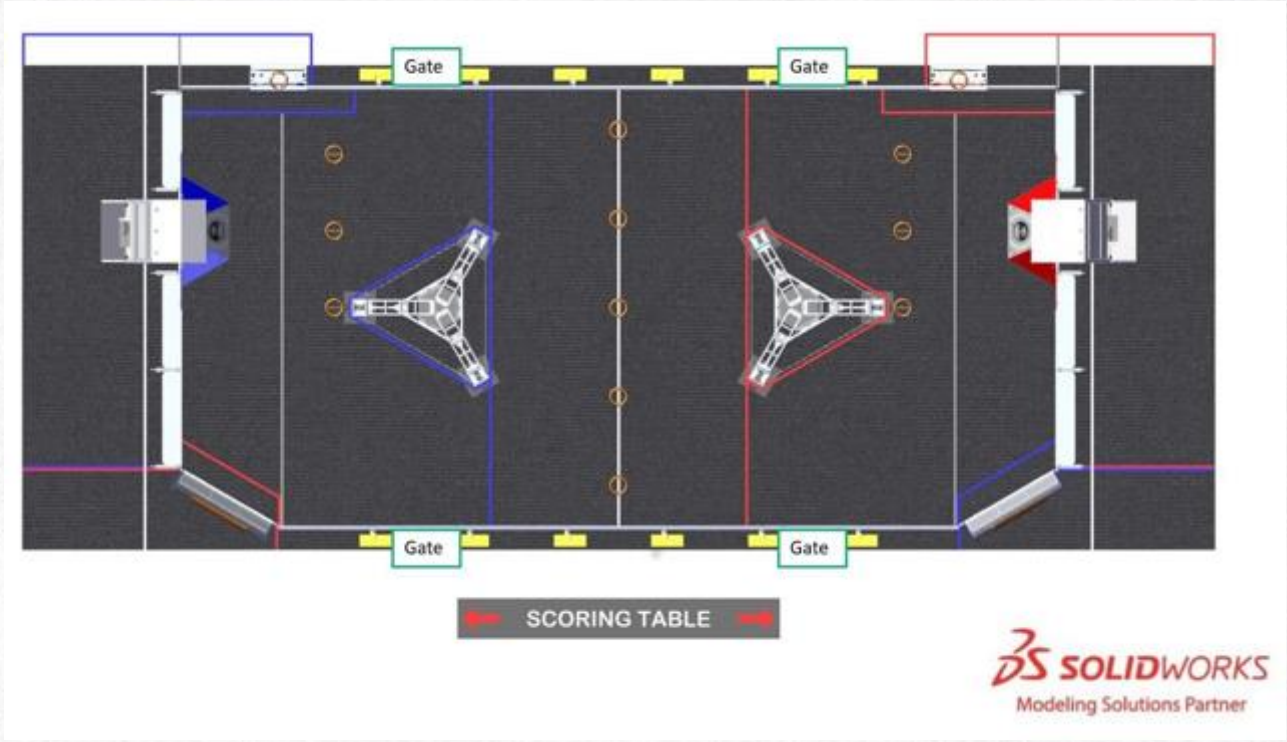
- 1 AMP per Alliance
- 1 Speaker per Alliance
- 1 Source per Alliance, and
- 1 Stage per Alliance



Field


FIELD Boundary
FIELD at the AMP
SCORING TABLE
SOLIDWORKS
Modeling Solutions Partner

Field


Gate
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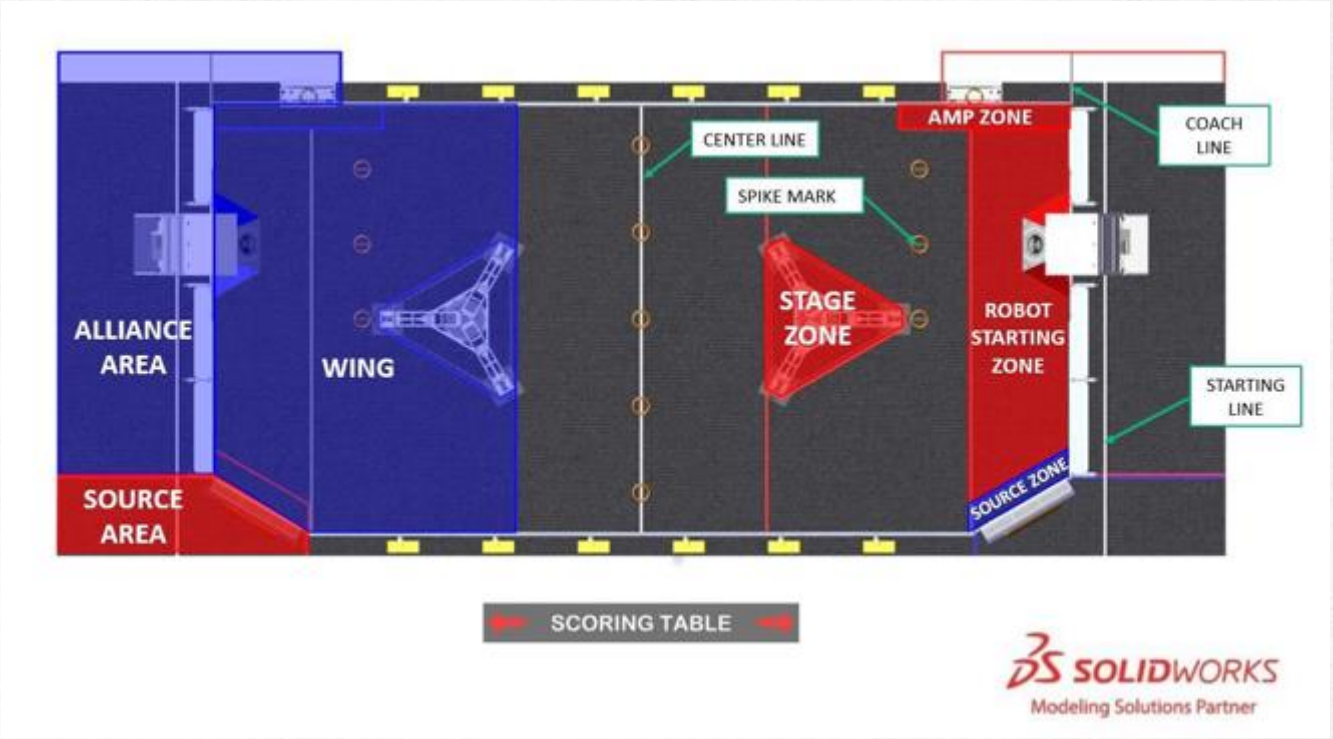
SCORING TABLE
SOLIDWORKS
Modeling Solutions Partner

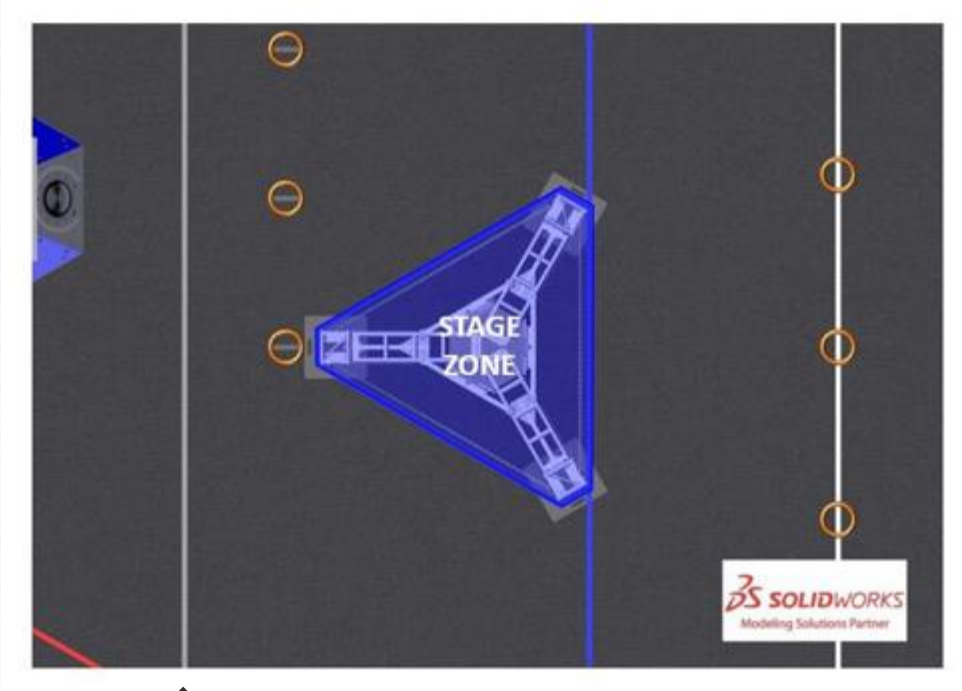
Field

Note: Colors for Source Area in Relation to Drive Station (opposite sides of field)



Field

Stage Zone



Starting Line

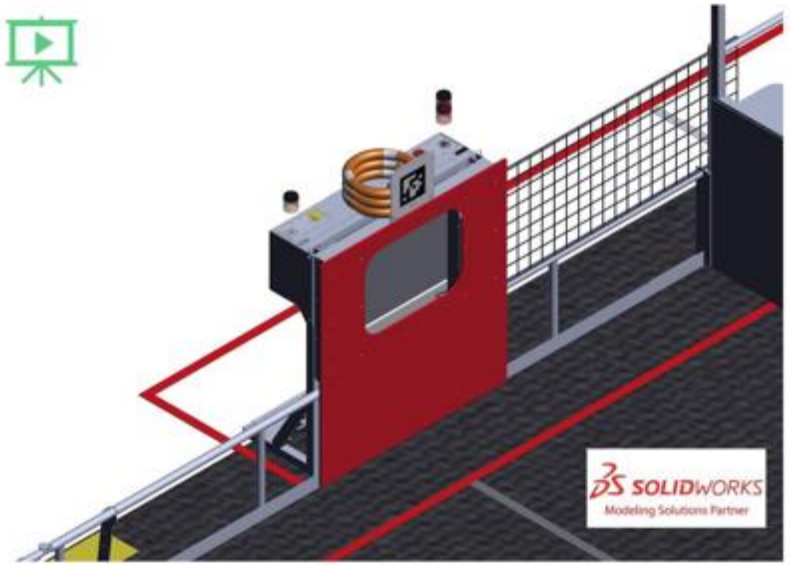
Field

AMP

An AMP is a structure used by ROBOTS to pass NOTES to the ALLIANCE AREA. There is 1 AMP per ALLIANCE. Each AMP has a vertical pocket that is 3⅞ in. deep (~10 cm), 1 ft. 6 in. tall (~46 cm), and 2 ft. wide (~61 cm).

The bottom of the pocket is 2 ft. 2 in. (~66 cm) from the carpet. Each AMP is 4 ft. 1½ in. (~126 cm) from the closest ALLIANCE WALL.
There are 2 sets of lights on top of the AMP; ALLIANCE-colored AMP lights and an amber *Coopertition* light. AMP lights indicate the number of NOTES accumulated for AMPLIFICATION or *Coopertition*. The *Coopertition* light indicates progress toward *Coopertition*.

Figure 5-6 AMP



Field

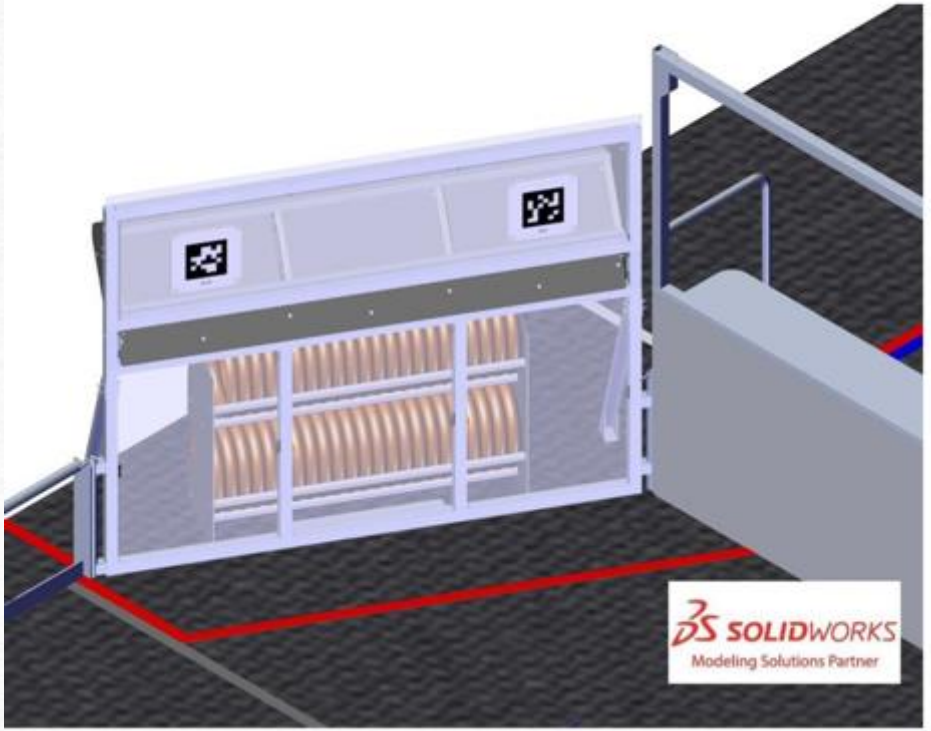
Source

A SOURCE is an assembly through which HUMAN PLAYERS feed NOTES into the FIELD. The SOURCE wall, the FIELD-facing side of the SOURCE, separates the SOURCE ZONE from the SOURCE AREA.

Each SOURCE has a 6 ft. 3 ¼ in. wide by 6 in. tall (~191 cm by ~15 cm) opening through which NOTES pass to the FIELD; the bottom of the opening is 3 ft. ¾ in. (~93 cm) from the carpet.

A 50° sloped tunnel, called the CHUTE, leads to the opening in the SOURCE wall. The CHUTE extends into the SOURCE AREA such that the bottom edge of its SOURCE AREA opening is 4 ft. 4¾ in. (~134 cm) above the carpet.

Figure 5-7 SOURCE

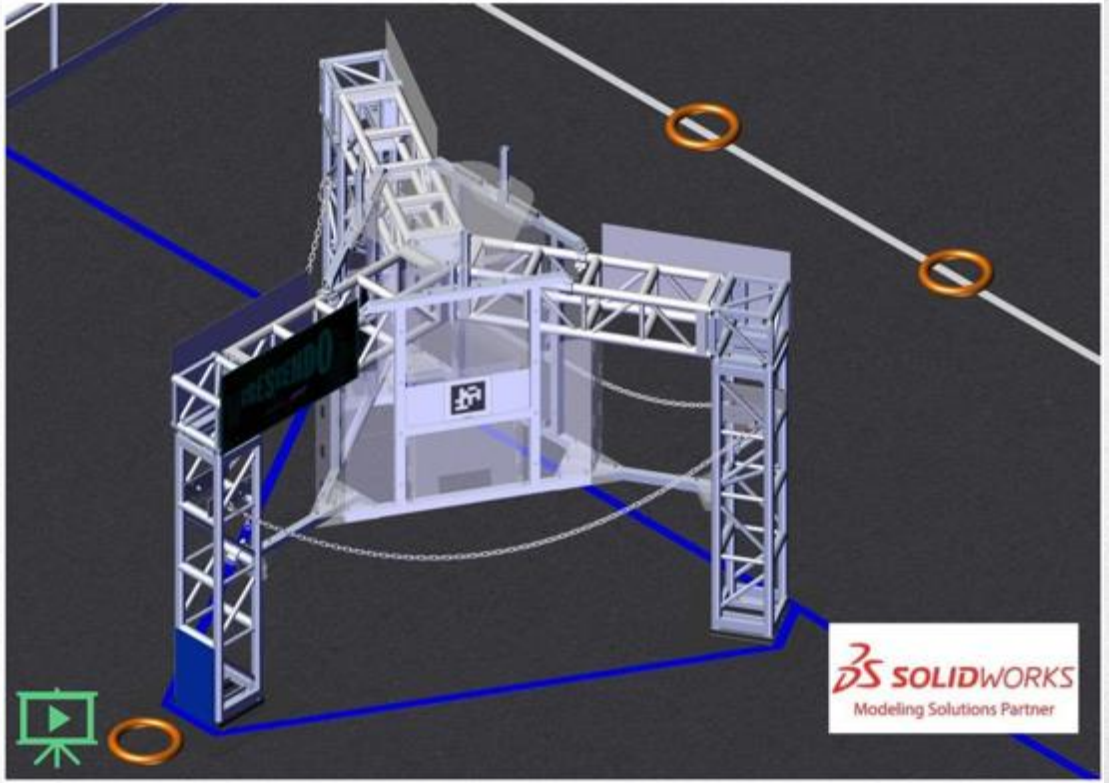


Field

Stage

Each STAGE is a 3-legged structure and 10 ft. 1 in. (~307 cm) from its corresponding ALLIANCE WALL. Each STAGE consists of truss feet, truss segments, truss junctions, aluminum framing, and polycarbonate sheets. The center core of the structure suspends from the truss such that aluminum surfaces are 2 ft. 4¼ in. (~72 cm) above the carpet, however certain features decrease the effective clearance under the core of the STAGE. The least amount of clearance is where polycarbonate gusset plates are above truss feet resulting in an actual clearance of 2 ft. 3⅞ in (~71 cm).

3 chains, designated STAGE Left, STAGE Right, and Center STAGE, as shown in Figure 5-9, span the space between each STAGE truss leg. Chains attach to each leg via a carabiner, eye bolt, and mounting gusset 4 ft. (~122 cm) above the carpet. Chains droop such that their lowest points are 2 ft. 4¼ in. (~72 cm) from the carpet, and the chain rests 1 ft. 4⅝ in. (~42 cm) from the face of the STAGE core.

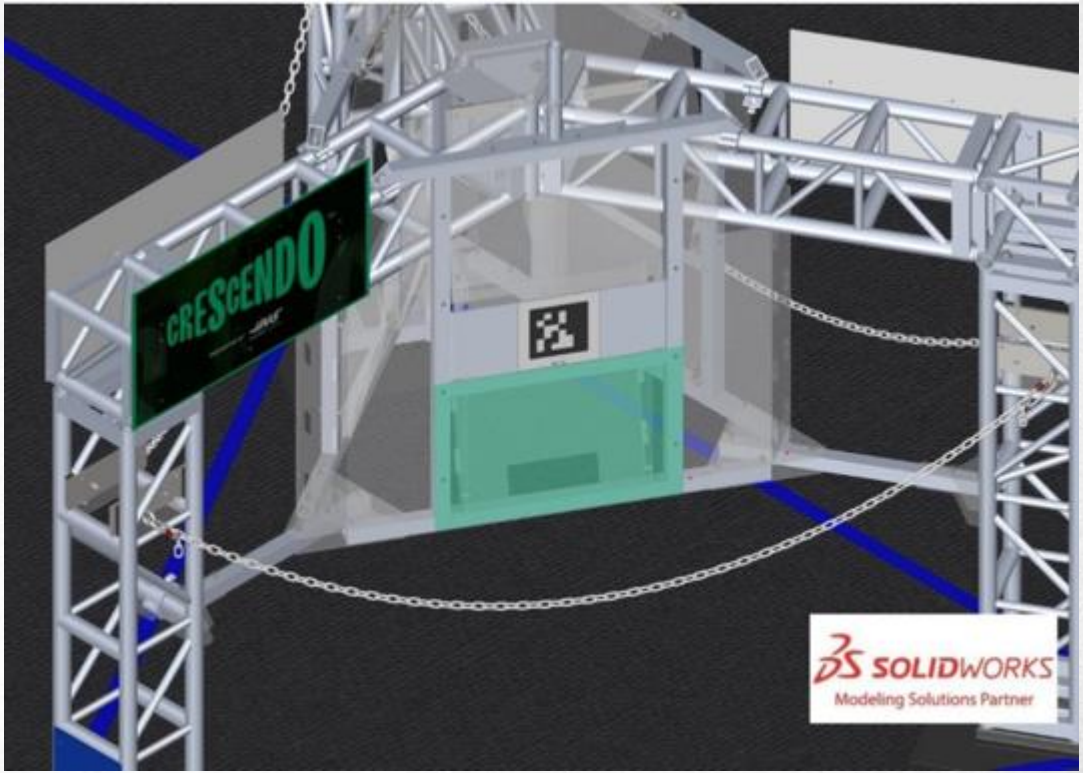


Field

Stage

The core structure of the STAGE is a 6-sided column covered by polycarbonate walls. Each of the 3 wider walls have an opening, covered by a flap, which leads to a TRAP. The bottom of each opening is 4 ft. 8½ in. (~144 cm) above the carpet.

The TRAP is the volume bounded by the 4 square tube segments highlighted in Figure 5-10 and the plastic panels covering the volume's front and back.

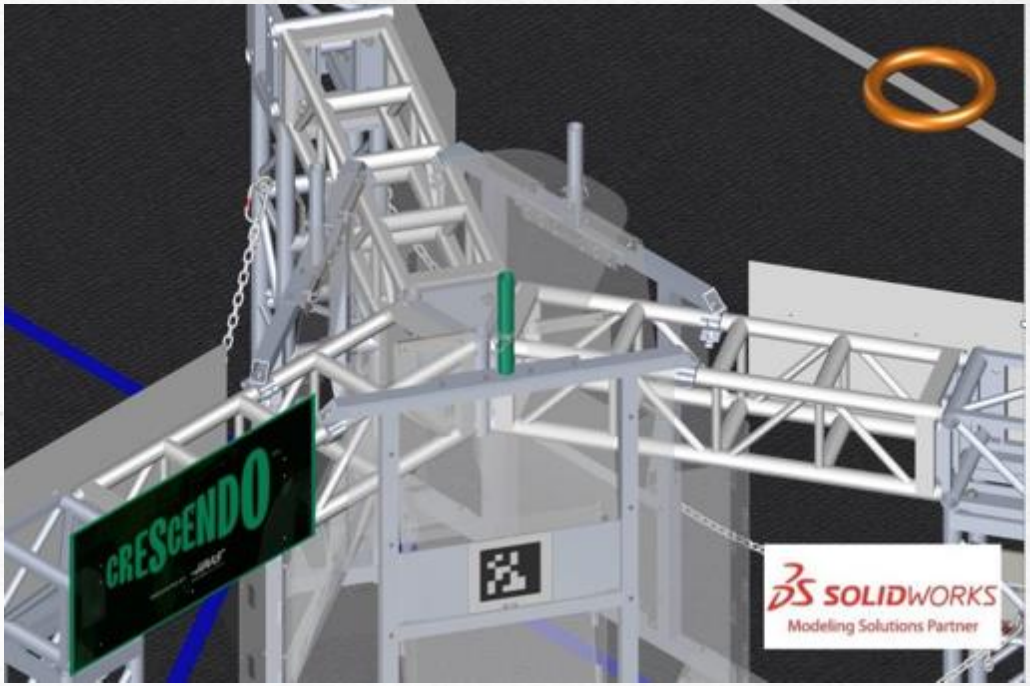


Field

Stage

A MICROPHONE is a vertical post centered above each TRAP and mounted to top of core structure. Each MICROPHONE is a 1-ft. tall (~30 cm) piece of 1¼ in. Schedule 40 (1.66 in. (~4 cm) outer diameter) aluminum pipe.

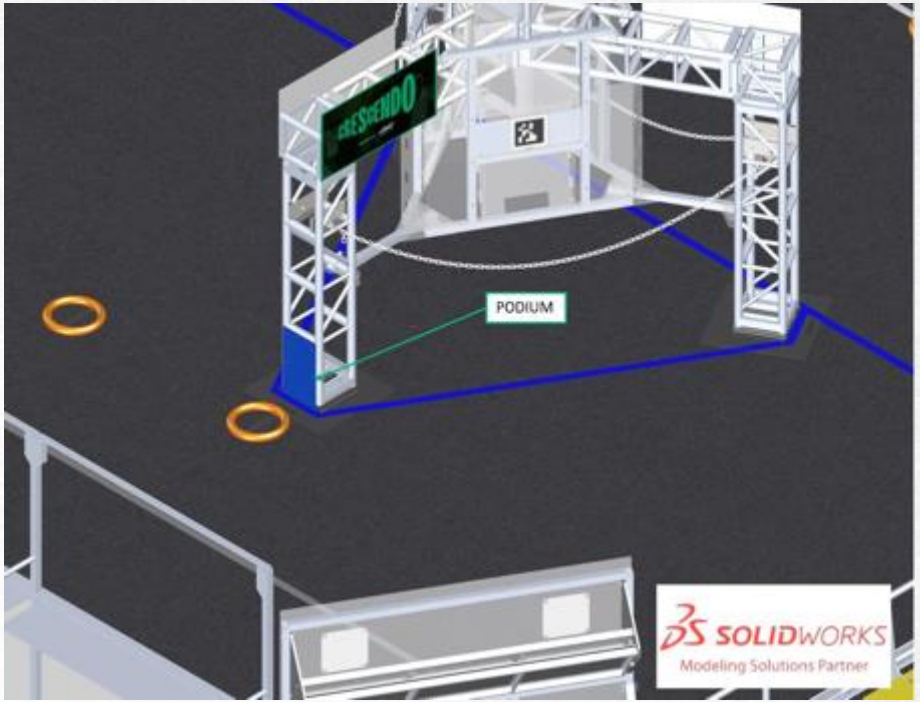
The top of each MICROPHONE is 7 ft. 4¼ in. (~224 cm) above the carpet



Field

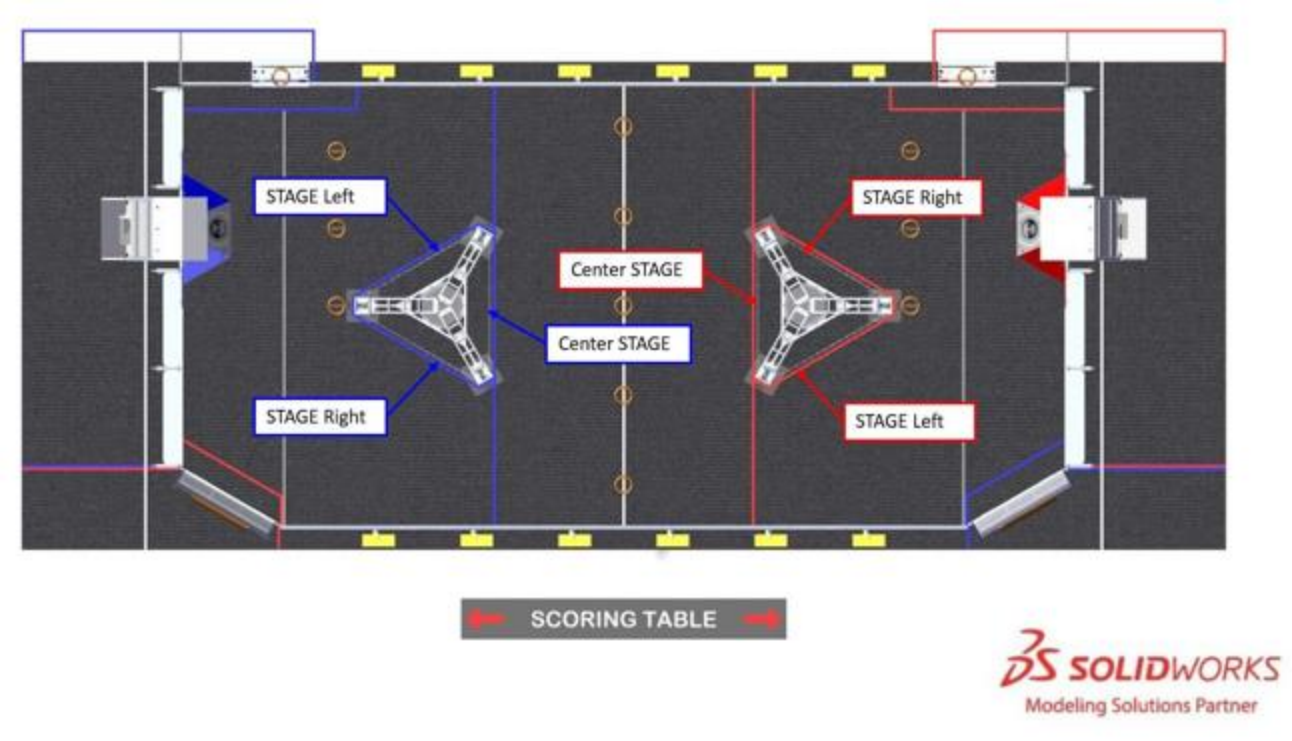
Stage

A PODIUM is an ALLIANCE colored HDPE panel attached to the STAGE leg facing the ALLIANCE WALL. Each PODIUM is 1 ft. 5¾ in. tall by 10 in. wide (~45 cm by ~25 cm) and mounted just above the top of the truss foot.



Field Areas

Stage Center, Left, and Right are in relation to driver station

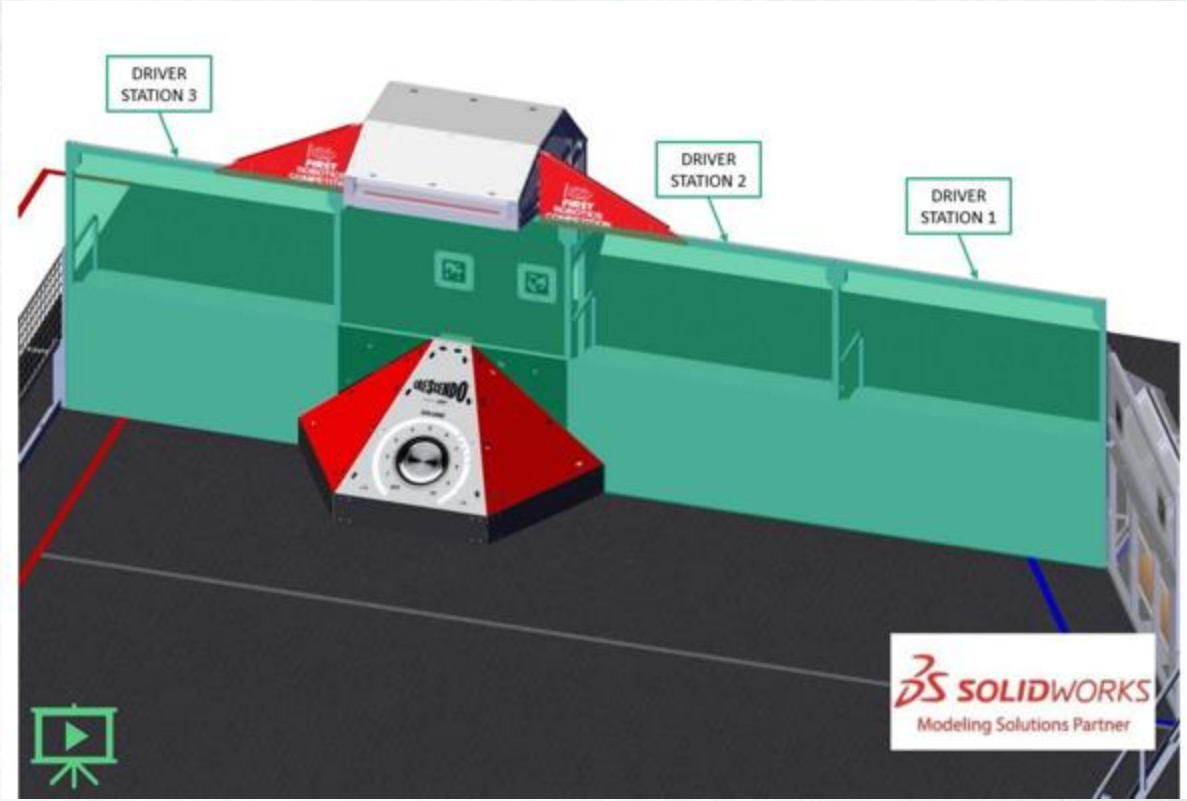


Field

Alliance Walls

The ALLIANCE WALL separates ROBOTS from DRIVE TEAM members in the ALLIANCE AREA.

It consists of 3 DRIVER STATIONS and the vertical surfaces behind the SUBWOOFER.



Field

Speaker

A SPEAKER consists of a SUBWOOFER and all elements above and behind the ALLIANCE WALL.

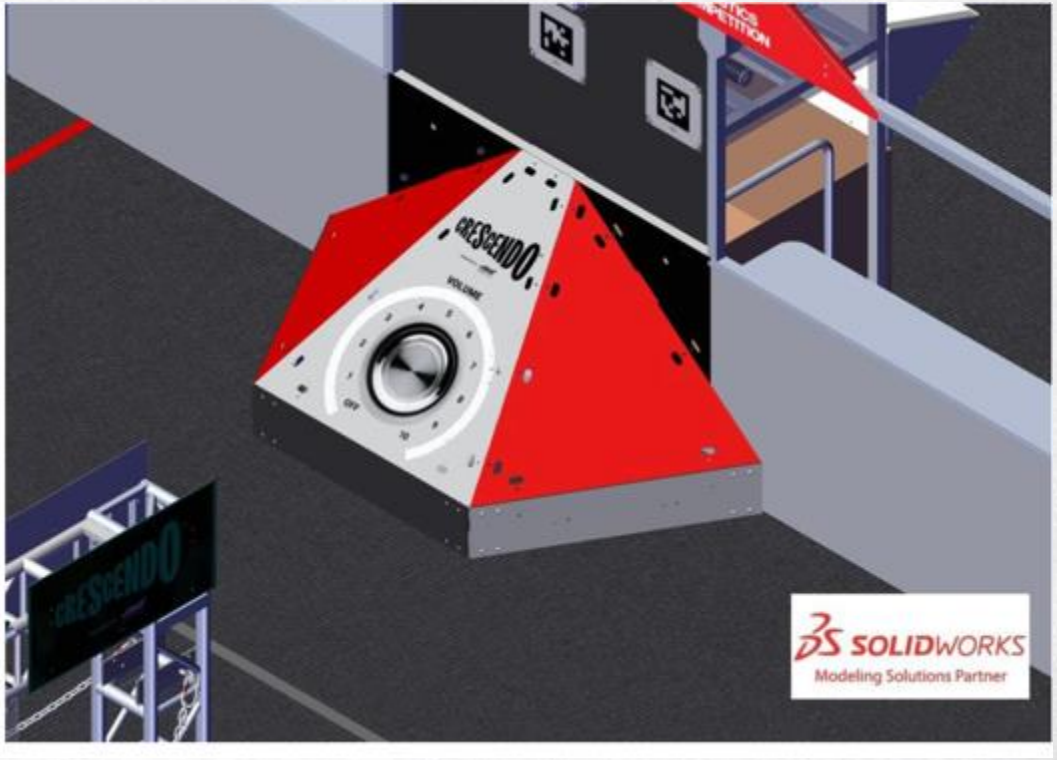
The SPEAKER features an opening through which ROBOTS score NOTES. The opening is bounded by SPEAKER components and the top of the ALLIANCE WALL. The lowest edge of the SPEAKER opening is 6 ft. 6 in. (~198 cm) from the carpet, and the highest edge of the opening is 6 ft. 10⅞ in. (~211 cm) above the carpet. The opening is 3 ft. 5⅜ in. (~105 cm) wide and extends 1 ft. 16 in. (~46 cm) into the FIELD. The plane of the opening is at a 14° upward angle relative to the carpet. The roof inside SPEAKER forms a concave surface against which NOTES bounce.

Field

Subwoofer

The SUBWOOFER is a 6-faced element centered below each SPEAKER and positioned against the ALLIANCE WALL. The SUBWOOFER is 3 ft. 1 in. (~94 cm) tall and the vertical panels are 8⅜ in. (~21 cm) tall. The SUBWOOFER extends 3 ft. ⅛ in. (~92 cm) from the ALLIANCE WALL. Vertical faces are black HDPE, the side inclined faces are ALLIANCE-colored HDPE, and the center inclined panels are vinyl-coated polycarbonate.

Lights indicate if the SPEAKER is AMPLIFIED and if so, how much AMPLIFICATION time remains. Light strings in the top of the SPEAKER match the ALLIANCE color and turn on if the SPEAKER is AMPLIFIED. ALLIANCE colored lights in the SUBWOOFER turn on when AMPLIFICATION starts and recede, second by second, as AMPLIFICATION progresses.

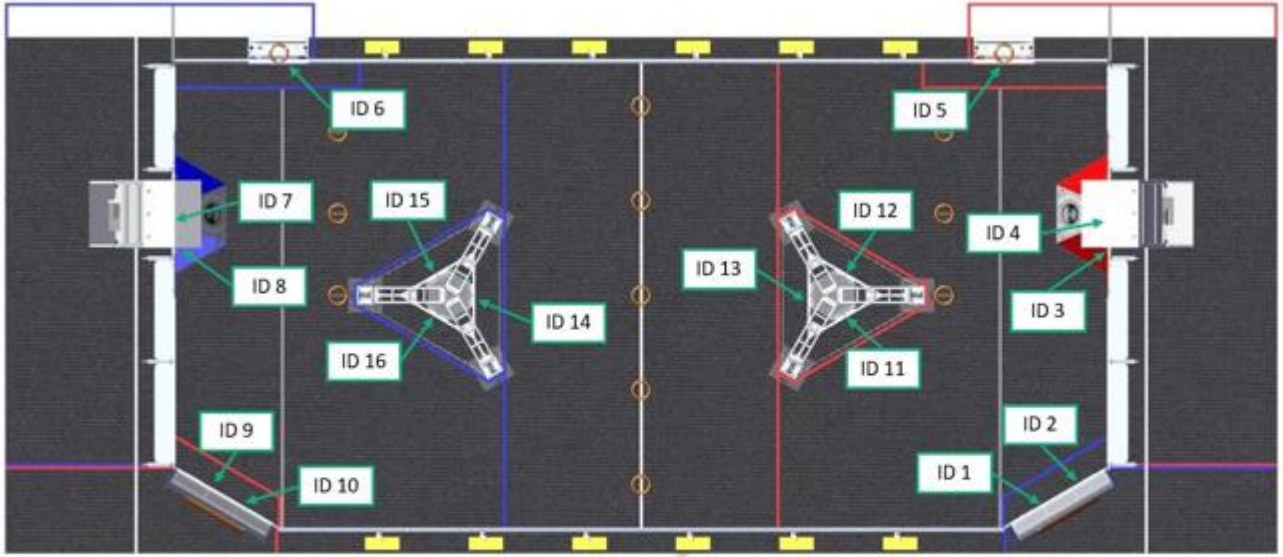


Game Pieces

A NOTE is an orange foam torus with a 10 in inside diameter, 1ft 2 in. outside diameter, 2 in thickness and weighs about 8.3 ox. The High NOTE is the same size and shape but also has 3 equidistant pieces of white gaffer tape.

AprilTags

See manual for exact locations

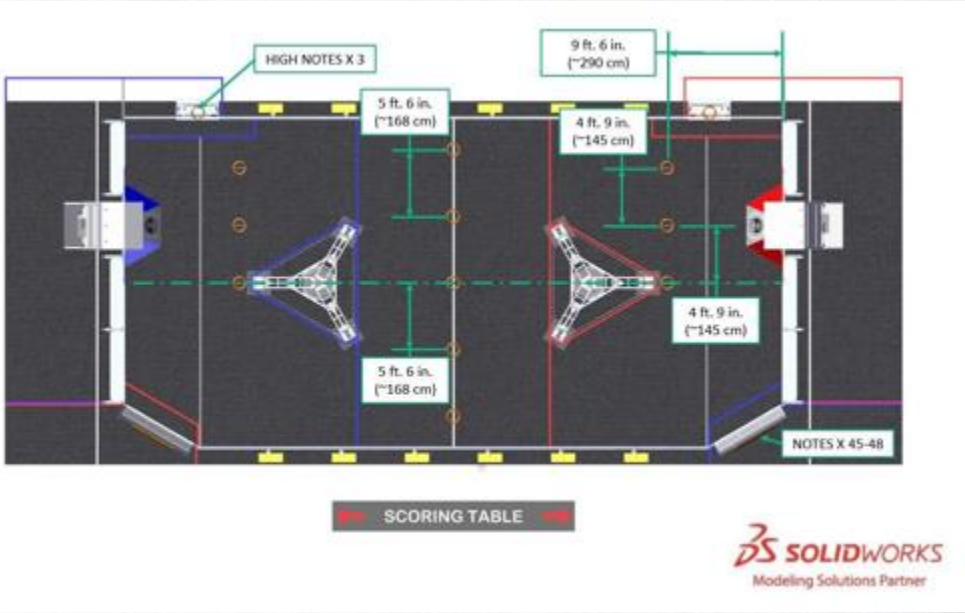


Match Play – Setup

3 HIGH NOTES are staged on top of each AMP.

107 NOTES are staged for each MATCH as follows (reference Figure 6-2):

- 90 NOTES are staged in the SOURCE AREAS (45 NOTES in each SOURCE AREA),
- 6 NOTES are staged on WING SPIKE MARKS (3 NOTES in each WING),
- 5 NOTES are staged on CENTER LINE SPIKE MARKS,
- 6 NOTES may be preloaded in ROBOTS, 1 per ROBOT, by the ROBOTS' DRIVE TEAMS such that the NOTE is fully supported by the ROBOT. A NOTE not pre-loaded in a ROBOT is staged with NOTES in the ALLIANCE'S SOURCE AREA.



Match Play – Setup

Each DRIVE TEAM stages their ROBOT such that its BUMPERS are fully contained within their starting zone

Humans stage for the MATCH as follows:
A. DRIVERS and COACHES stage inside their ALLIANCE AREA and behind the STARTING LINE.
B. HUMAN PLAYERS stage behind the STARTING LINE in either their SUBSTATION AREA or ALLIANCE AREA.
C. TECHNICIANS stage in the event-designated area near the FIELD.
.

Match Play – Scoring

ALLIANCES are rewarded for accomplishing various actions through the course of a MATCH, including leaving their ROBOT STARTING ZONE, scoring NOTES in their SPEAKER and AMP, taking their STAGE, SPOTLIGHTING ONSTAGE ROBOTS by scoring HIGH NOTES, cooperating with their opponents, and winning or tying MATCHES.

Rewards are granted either via MATCH points, *Coopertition* points, or Ranking Points (often abbreviated to RP, which increase the measure used to rank teams in the Qualification Tournament).

All scores are assessed and updated throughout the MATCH, except as follows:

- assessment of NOTES scored in SPEAKERS continues for up to 3 seconds after the ARENA timer displays 0:00 following AUTO.
- assessment of NOTES scored in SPEAKERS continues for up to 3 seconds after the ARENA timer displays 0:00 following TELEOP.
- assessment of STAGE points is made 5 seconds after the ARENA timer displays 0:00 following TELEOP, or when all ROBOTS have come to rest following the conclusion of the MATCH, whichever happens first.

Match Play – Leave Points and Park Points

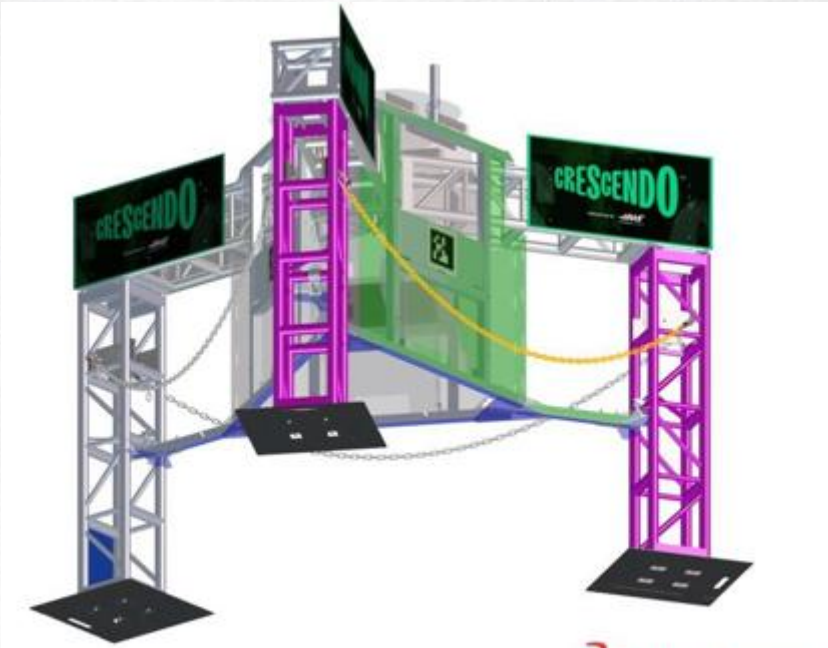
To qualify for LEAVE points, a ROBOT'S BUMPERS must completely clear its ROBOT STARTING ZONE at any point during AUTO.

To qualify for PARK points, a ROBOT'S BUMPERS must be partially or completely contained in the STAGE ZONE at the end of the MATCH (more specifically, per criteria described in item C of Section 6.5 Scoring) and does not meet the criteria for ONSTAGE.

Match Play –Onstage Points

To qualify for ONSTAGE points, a ROBOT may only be contacting:

A. truss legs (pink shaded elements in Figure 6-3) via ROBOT BUMPERS,
B. GAME PIECES,
C. chain-facing vertical surfaces of the core (with regards to the chain used by the ONSTAGE ROBOT, green shaded elements in Figure 6-3),
D. carpet facing surfaces of the core (blue shaded elements in Figure 6-3), and
E. a single STAGE chain (highlighted in orange in in Figure 6-3),
F. another ROBOT qualified for ONSTAGE points,
G. another ROBOT awarded the ENSEMBLE RP because of a G424 infraction, and
H. an opponent ROBOT.



An ALLIANCE achieves HARMONY if more than 1 ROBOT is ONSTAGE via direct or transitive support from a single chain. HARMONY points, as specified in Table 6-2 are awarded per additional ROBOT.

Amplification

AMPLIFICATION increases the number of MATCH points awarded for NOTES scored in a SPEAKER.

To AMPLIFY, an ALLIANCE must have at least 2 NOTES through their AMP. Once this criterion is met, the HUMAN PLAYER may press the AMP button which AMPLIFIES their SPEAKER for 10 seconds. Due to NOTE transit time from the SPEAKER opening to the sensor array, there is a 3-second extension on the end of the nominal AMPLIFICATION time in account for NOTES that entered the SPEAKER within 10 seconds of the AMP button being pressed but haven’t yet been processed.

An ALLIANCE must collect another 2 NOTES through their AMP after AMPLIFICATION ends before they are able to AMPLIFY their SPEAKER again. While NOTES delivered through the AMP during AMPLIFICATION do not contribute to the next AMPLIFICATION, they do earn MATCH points

Spotlighting

ALLIANCES may SPOTLIGHT ROBOTS by scoring a HIGH NOTE on a MICROPHONE. Once a HIGH NOTE is scored on a MICROPHONE, ONSTAGE ROBOTS paired with (i.e. below) the MICROPHONE on which the HIGH NOTE was scored are awarded a greater number of points

Coopertition Bonus

If both ALLIANCES use a NOTE scored in their AMP to engage in *Coopertition* (by pressing their *Coopertition* button) within the first 45 seconds of TELEOP (i.e. remaining MATCH time is greater than 1:30), all teams earn a *Coopertition* Bonus, and the threshold for the MELODY decreases as described in Table 6-2.

A NOTE used for *Coopertition* is no longer eligible for contribution to AMPLIFICATION.

In Playoff MATCHES, the *Coopertition* button is unused.

Match Play – Point Values

		MATCH points		Ranking Points	*Coopertition* Points
		AUTO	TELEOP		
LEAVE		2			
NOTES	AMP NOTE	2	1		
	SPEAKER NOTE (not AMPLIFIED)	5	2		
	SPEAKER NOTE (AMPLIFIED)		5		
STAGE	PARK		1		
	ONSTAGE (not SPOTLIT)		3		
	ONSTAGE (SPOTLIT)		4		
	HARMONY		2		
	NOTE in TRAP (max. 1/TRAP)		5		
***Coopertition* Bonus**					1
MELODY	At least 18 (15 if *Coopertition* Bonus) AMP & SPEAKER NOTES*			1	
ENSEMBLE	At least 10 STAGE points and at least 2 ONSTAGE ROBOTS*			1	
Tie	completing a MATCH with the same number of MATCH points as your opponent			1	
Win	completing a MATCH with more MATCH points than your opponent			2	

Game Play – Rule Violations

Penalty	Description
FOUL	a credit of 2 points towards the opponent's MATCH point total
TECH FOUL	a credit of 5 points towards the opponent's MATCH point total

Penalty	Description
YELLOW CARD	a warning issued by the Head REFEREE for egregious ROBOT or team member behavior or rule violations. A subsequent YELLOW CARD within the same tournament phase results in a RED CARD.
RED CARD	a penalty assessed for egregious ROBOT or team member behavior or rule violations which results in a team being DISQUALIFIED for the MATCH.
DISABLED	the state in which a ROBOT is commanded to deactivate all outputs, rendering the ROBOT inoperable for the remainder of the MATCH.
DISQUALIFIED	the state of a team in which they receive 0 MATCH points and 0 Ranking Points in a Qualification MATCH or causes their ALLIANCE to receive 0 MATCH points in a Playoff MATCH

Game Play – Drive Team

Role	Description	Max/Drive Team	Criteria
Coach	A Guide or advisor	1	Any team member
Driver	An operator and controller of the robot	3	Student
Human Player	A game piece manager		
Technician	A resource for robot troubleshooting, setup, and removal from the field	1	Any team member

Game Rules - Robots

Only close shots in AUTO. In AUTO, a ROBOT whose BUMPERS are completely outside their WING may not cause a NOTE to travel into or through their WING.

Game Rules - Robots

1 NOTE at a time. In TELEOP, a ROBOT may neither

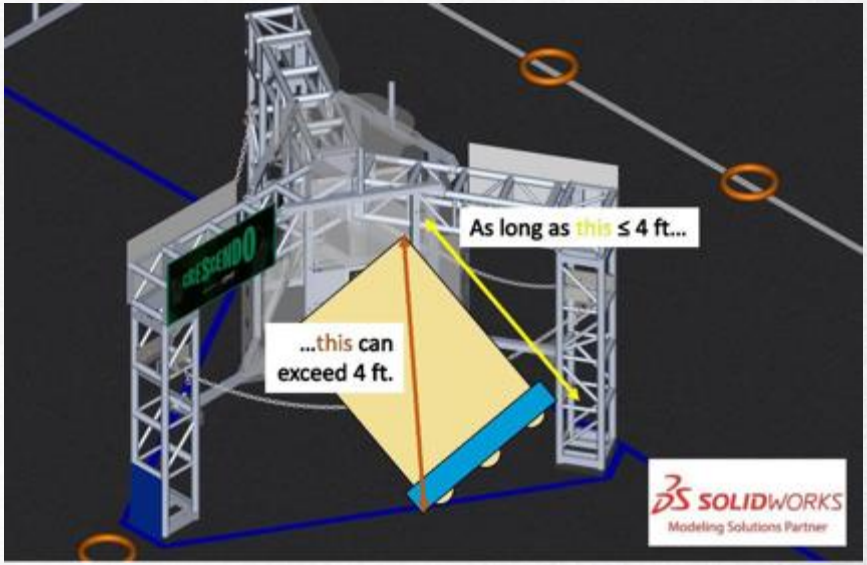
- leave its SOURCE ZONE with CONTROL of more than 1 NOTE nor
- have greater-than-MOMENTARY CONTROL of more than 1 NOTE,

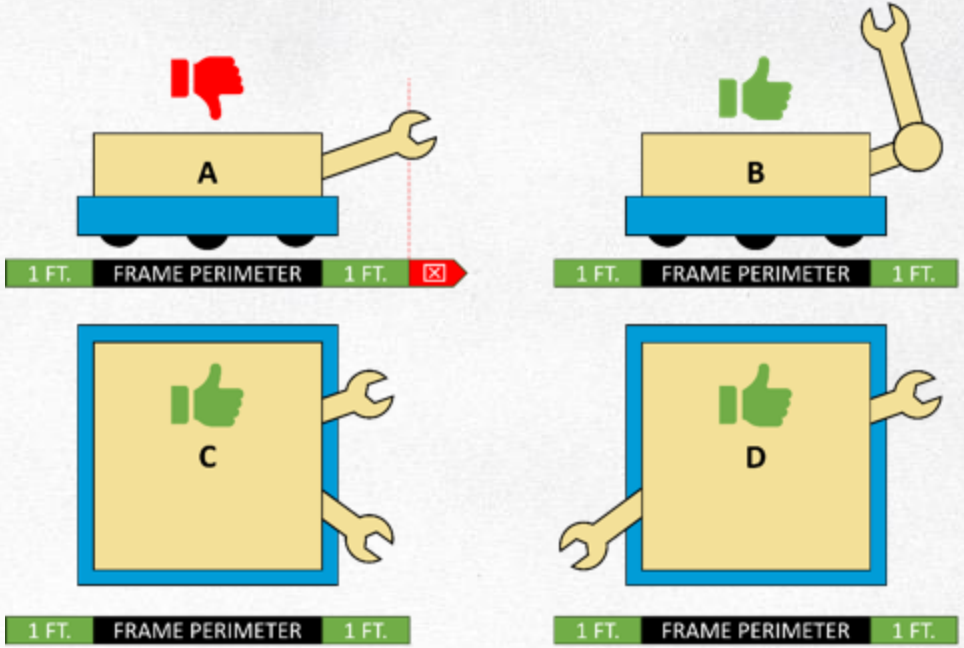
Robot Construction Rules

Expansion limits. A ROBOT may not expand beyond either of the following limits:

- A. it's height, as measured when it's resting normally on a flat floor, may not exceed 4 ft. (~132 cm) or
- B. it may not extend more than 1 ft. (~40 cm) from its FRAME PERIMETER.

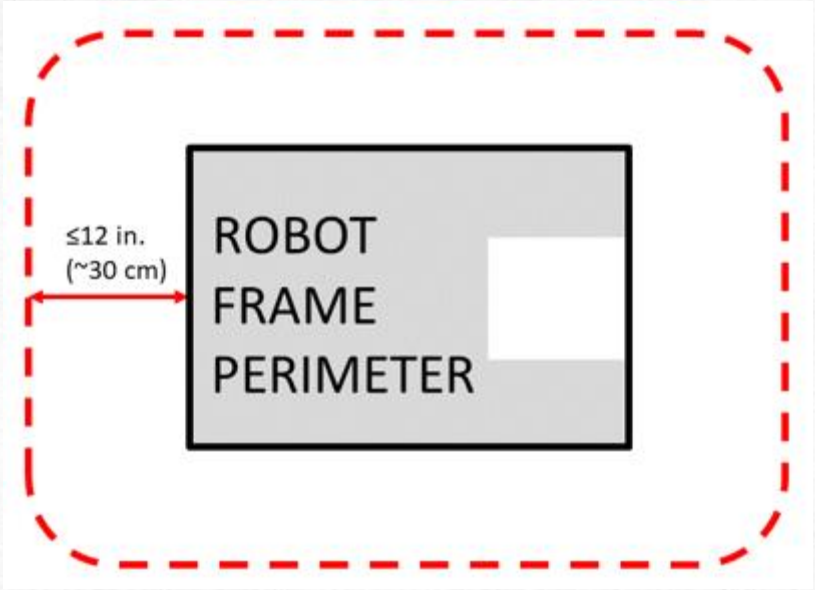
Overexpansion due to damage, provided the expansion isn't leveraged for strategic benefit, is an exception to this rule.




A
1 FT.
FRAME PERIMETER
1 FT.
B
1 FT.
FRAME PERIMETER
1 FT.
C
1 FT.
FRAME PERIMETER
1 FT.
D
1 FT.
FRAME PERIMETER
1 FT.

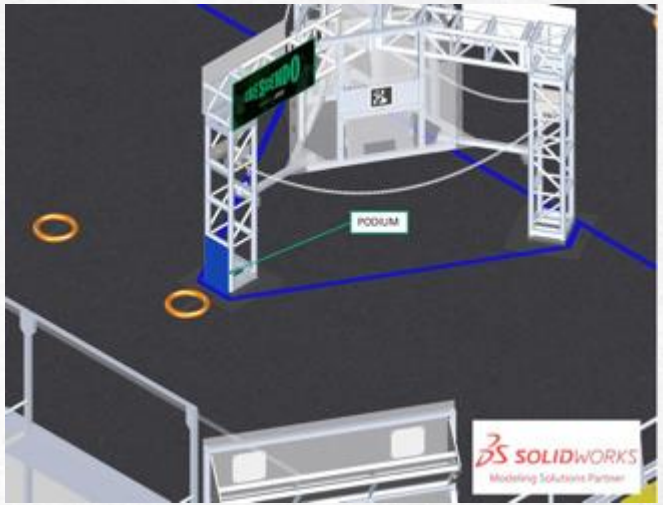
Robot Construction Rules

- A robot's starting configuration may not have a frame perimeter greater than 120 in. and may not be more than 4 ft. tall.
- Robots may not extend more than 12 in. beyond their frame perimeter



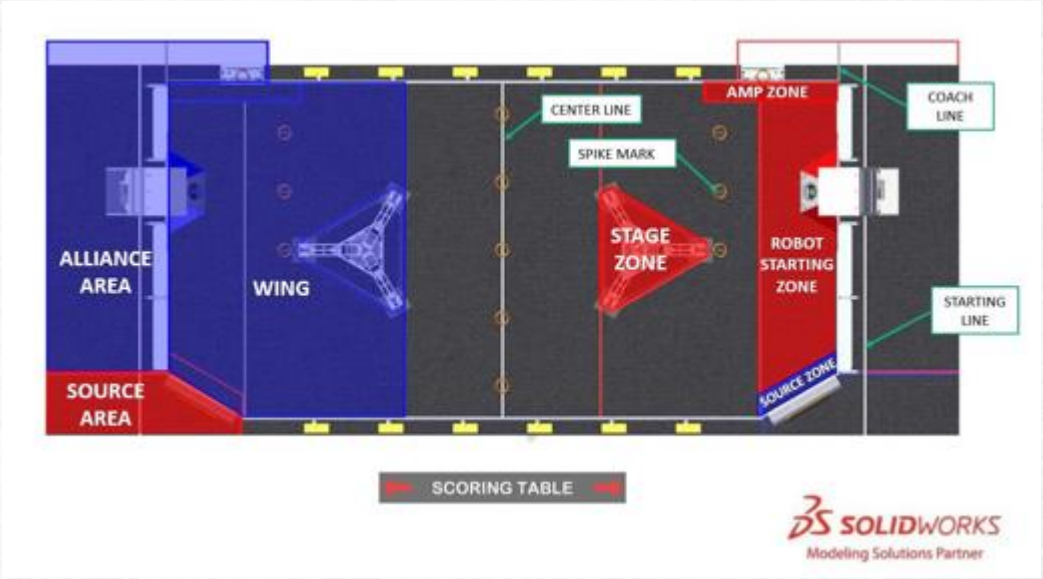
Podium Protection

Prior to the last 20 seconds of a MATCH, a ROBOT may not contact (either directly or transitively through a NOTE and regardless of who initiates contact) an opponent ROBOT whose BUMPERS are in contact with their PODIUM.



Source/AMP Zone Protection

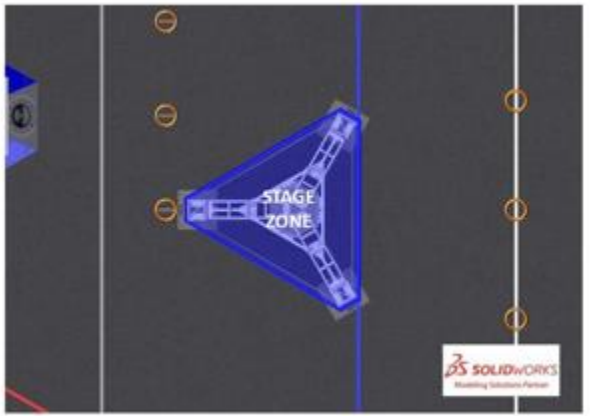
A ROBOT may not contact (either directly or transitively through a NOTE and regardless of who initiates contact) an opponent ROBOT if any part of either ROBOT'S BUMPERS are in the opponent's SOURCE ZONE or AMP ZONE.



Stage Protection

A ROBOT may not contact (either directly or transitively through a NOTE and regardless of who initiates contact) an opponent ROBOT if either of the following criteria are met:

- A. the opponent ROBOT is not in contact with the carpet or
- B. any part of either ROBOT'S BUMPERS are in the opponent's STAGE ZONE during the last 20 seconds of the MATCH.

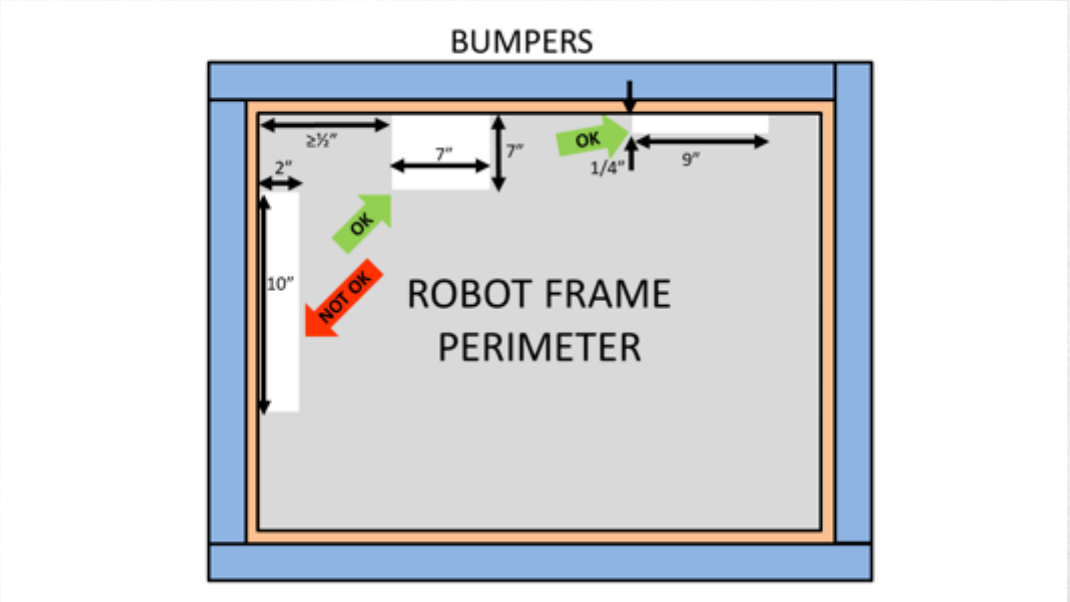


Other Robot Construction Rules

- No overhang at start of match – must be within frame perimeter
- Robot weight must not exceed 125 lbs. (excluding bumpers, battery and associated half of the Anderson cable quick connect)
- Robot cannot be more than 4 ft. tall
- Robots can’t choke up on chain.
- Follow all safety rules and don’t damage field
- No individual, non-KOP item or software shall have a Fair Market Value that exceed $600 USD

Robot Construction Rules

- Bumpers should protect the corners (similar to past years) and
- Looks like must cover the entire robot (no gaps) – new this year



Tournaments

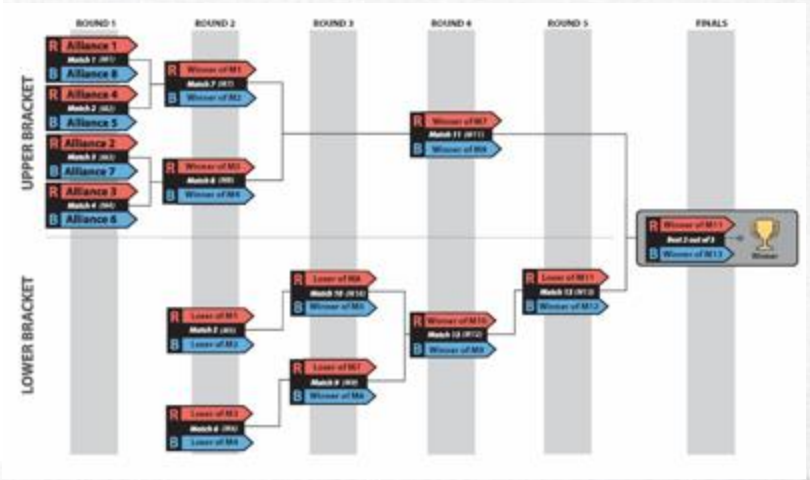
- Michigan Districts have qualification matches to determine seeding
  - Three team alliances play and each alliance member gets the ranking points for that match for their alliance (unless red card or they did not show up)
  - Teams ranked by ranking points with tie breakers

Order Sort	Criteria
1st	Ranking Score
2nd	Average *Coopertition* Bonus points
3rd	Average ALLIANCE MATCH points, not including FOULS and TECH FOULS
4th	Average ALLIANCE LEAVE + AUTO NOTES points
5th	Average ALLIANCE PARK, ONSTAGE, and NOTE in TRAP points
6th	Random sorting by the FMS

Tournaments

- Michigan Districts
  - Following qualification matches, alliances are selected
  - No more ranking points - first alliance to win two matches advances to next round
  - Much more will be explained when we get to our first tournament

MATCH	Blue	Red	Blue Gap (minutes)	Red Gap (minutes)	Winner moves to	Loser moves to
Upper Bracket – Round 1 – MATCH 1	ALLIANCE 8	ALLIANCE 1			Red – MATCH 7	Red – MATCH 5
Upper Bracket – Round 1 – MATCH 2	ALLIANCE 5	ALLIANCE 4			Blue – MATCH 7	Blue – MATCH 5
Upper Bracket – Round 1 – MATCH 3	ALLIANCE 7	ALLIANCE 2			Red – MATCH 8	Red – MATCH 6
Upper Bracket – Round 1 – MATCH 4	ALLIANCE 6	ALLIANCE 3			Blue – MATCH 8	Blue – MATCH 6
8-minute Break						
Lower Bracket – Round 2 – MATCH 5	Loser of MATCH 2	Loser of MATCH 1	24m	31m	Blue – MATCH 10	
Lower Bracket – Round 2 - MATCH 6	Loser of MATCH 4	Loser of MATCH 3	17m	24m	Blue – MATCH 9	
Upper Bracket – Round 2 - MATCH 7	Winner of MATCH 2	Winner of MATCH 1	38m	45m	Red – MATCH 11	Red – MATCH 9
Upper Bracket – Round 2 - MATCH 8	Winner of MATCH 4	Winner of MATCH 3	31m	38m	Blue – MATCH 11	Red – MATCH 10
8-minute Break						



Tournaments

- Michigan Events for Adambots
  - Kettering #1 – March 1-2 (load in February 29)
  - Troy – March 23-24 (load in March 22 (note this is a Sat-Sun event)
  - Michigan State Championship if qualifying – April 4-6
    - 160 teams will qualify for the Michigan State Championship
  - World Championship – Houston if qualifying – April 17-20
    - 86 teams from Michigan will qualify

Considerations

What is important to do?

- For ranking points
- For auto scoring
- For teleop scoring
- For making it into the Playoff round
- For durability and reliability
- To win engineering awards

Form follows function:

- Decide what function(s) we want to perform (our primary strategy) before deciding on what form to make the robot

Considerations

- What can be done so that the robots will be done in time to practice (driving a robot after 4 weeks – don't laugh – we can do it)?
- Should we plan to use the camera to either help drivers or use Apriltags?
- Think about how you would do it if only humans played
- What is impact of limited size restrictions?
- For each function, consider impact on rest of robot functions, space, weight, balance, etc.
- Decide what we don't want to do and eliminate it from further consideration
- Trying to do everything usually means you sacrifice doing a few things really well

Considerations

- What worked well in the past that we should repeat?
- What didn’t work well in the past that we should avoid?
- What can be programmed?
- What do we know how to do? (now includes swerve drive option)
- What can be done effectively?
- Are we only building one robot?
- What needs to be done in CAD first vs. done and then use CAD to improve the second robot?

Considerations

- What is needed to win in week one might not win in week four or State Championship
- The better the robot and drive team, the more we play and the more the robot is used
- What about defense in this year’s game?

Strategy and Design Development

1. Taking next couple of days to “really, really, really think about the problem” before we solve the problem.
2. All engineering team leaders are also on the Strategy Team and will be involved in the strategy development in the next week.
3. Today we are gathering information from what we know today.

Design Selection

Hopefully, by next Saturday we will:

- Complete problem definition (what do we want to do)
- Review various design concepts we want to consider for each problem
- Eliminate things we do not want to do
- Decide how we are breaking up the mechanical teams
- Get started on programming concepts
- Determine any prototypes or CAD models we need to make to determine direction
- Develop a materials list of items we need now
- Decide what field elements we will need for future uses
- Start fabrication of items (chassis frame for example)

Robotics Collaboration Meetings on Saturdays

FRC Collaboration Meetings 2024 Season

	Team Number	Team Name	School	Name	email	Event 1	Event 2	Event 3	Event 4
	201	FEDS	Rochester HS, Rochester Hills, MI	Ari McEntire Shishir Gupta	ari.mcentire@gmail.com skgupta44120@gmail.com	FIM District Wayne State University March 10-12, 2023	FIM District Troy March 24-26, 2023		
	245	Adambots	Rochester Adams HS, Rochester Hills, MI	Rick Drummer John Bueltel John Savage	rickdrumrs@aol.com bueltel.john@gmail.com jrsavage11@gmail.com	FIM District Kettering #1 February 29 - March 2, 2024	FIM District Troy March 22-24, 2024		
	302	The Dragons	Lark Orion HS, Lake Orion, MI	Tanay Patel	adambots.tanay@gmail.com	FIM District Jackson March 2-4, 2023	FIM District Standish-Sterling March 16-18, 2023		
	2224	Renaissance RoboPhoenix	Renaissance HS, Detroit, MI	Dominic Lanni	domLanni55@gmail.com	FIM District Milford March 2-4, 2023	FIM District Detroit March 16-18, 2023		
	3096	Village Bulldogs	East English Village Prep High School, Detroti, MI	Keith Buford	keith.buford@gm.com	FIM District Wayne State University March 10-12, 2023	FIM District Detroit March 16-18, 2023		
	3478	LamBot	Technologico de Monterrey Campus, San Luis, Mexico	David Bustost Bernardo Fernandez	david.bustost@gmail.com bfl.1691@gmail.com	Regional Monterrey March 1-4, 2023	Bayou Regional March 19-Aril 1, 2023		
	4735	DEROF	Torreon, Mexico			Regional Puebla March 15-18, 20232	Regional Laguna March 22-25, 2023		
	5213	SHIELD	Lasalle HS, St. Ignace, MI	Andrew Long Merlin Doran	along@eupschools.org merdoran@gmail.com	FIM District Escanaba March 2-4, 2023	FIM District LSSU March 23-25, 2023		
	5436	Cyber Cats	Stoney Creek HS, Rochester Hills, MI	Lou Begin Keith Rowland Jacob Russell	Louis.begin@gm.com keithgrowland@gmail.com jacob_24@live.com	FIM District Kettering #1 March 2-4, 2023	FIM District Troy March 24-26, 2023		
	6121	RoboVikes	Grayling HS, Grayling, MI	Rick McBride	rickmcbride7@gmail.com	FIM District Traverse City March 16-18, 2023	FIM Distirct LSSU March 23-25, 2023		
	6832	STEAMex	Santa Catarina, Nuevo Leon, Mexico	Jesus Betancourt Miguel Garcia Grecia Pacheco	jafbetancourt@gmail.com miangaro@hotmail.com A01366730@tec.mx	Regional Monterrey March 1-4, 2023	Green Country Regional April 5-8, 2023		
	7911	Belding Scrapcat Robotics	Belding, MI	Alex Colville	colvillea@beldingschools.org	FIM District Muskegon March 14-16, 2024	FIM Kentwood March 28-30, 2024		
	9252			Angelica Tibbits	angelica.tibbitts@leonagroupmw.com				

Resources on Adambots Website – www.adambots.com
Resources Tab – Helpful Documents Section

https://www.adambots.com/resources/helpful-documents/game-rule-summaries/

https://www.adambots.com/resources/helpful-documents/technical%20training/

Reminders

- Strategy helps inform design (know what we want to do and why before we design it)
- Form follows function – our design form should be based on the functions we want/need to perform
- Quality and robustness – Robot will need to withstand lots of impacts, and maybe some falls, for at least two tournaments and hopefully more
- Our team does not have all the experience we used to have, so we need each other and lots of communications, especially from student leads.

Mentors support, student leaders, and drive team

- Mentors, please do what you can to be there to help the team, especially mechanical as they are here every nights and Saturday
- Student leadership – Let Mr. Drummer know your schedule for this week by 4:00 PM today
- Drive team try outs and selection will not start for several weeks. More will be communicated at team meetings on Thursday night at 6:30 PM in room 216.

Questions and Answers

Time for additional Q & A

Afterwards, will break out into smaller groups and head to robotics rooms for discussions